

## REMARKS

In response to the Office Action mailed March 9, 2010, Applicants hereby request reconsideration of the rejections based upon the claim amendments and arguments submitted herewith. Claims 10-18, 21-24, and 37-49 were last presented for examination, of which all were rejected, with the following issues being raised:

1. Claims 11-18, 21-24, and 37-49 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite;
2. Claims 10-18, 21, and 37-46 were rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 2,536,454 to McIntyre in view of U.S. Patent No. 4,739,692 to Wassam et al. ("Wassam"), and further in view of U.S. Patent No. 6,067,892 to Erickson; and
3. Claims 22-24 and 47-49 were rejected under 35 U.S.C. § 103(a) as being obvious over McIntyre in view of Wassam, and further in view of Erickson, and still further in view of U.S. Patent No. 5,158,005 to Negishi et al.

Following the above amendments to the claims, claims 10-18, 21-24, and 37-49 remain pending in the application, with claims 10 and 37 being independent.

### Indefiniteness Rejection

Claims 11-18, 21-24, and 37-49 have been amended to address the indefiniteness rejection. Applicants submit that each of these claims now fully complies with 35 U.S.C. § 112, second paragraph.

### Obviousness Rejection

Claim 10 was rejected as obvious over McIntyre in view of Wassam, and further in view of Erickson. A *prima facie* case of obviousness requires that each and every limitation of the claim must be taught or disclosed by the cited combination. MPEP 2142. In addition, the prior art must be considered in its entirety, including portions that teach away from the claimed invention. MPEP 2141.02(IV). Claim 10 is directed toward an artificial muscle system in which "the mechanical device expands the ends [of the

inner bladder] longitudinally when the inner bladder is depressurized.” The cited combination does not teach this limitation.

McIntyre teaches a “Toe Lift Attachment” for leg braces. This toe lift attachment includes two springs, each having one end attached to the leg brace on either side of the knee, with the other end attached points on either side of the top of the foot. (See Figs. 1-3.) In considering the teachings of McIntyre in its entirety, it is necessary to consider that McIntyre only teaches a **toe lift** mechanism—there is no mechanism to lower the wearer’s toe other than the wearer’s own muscles. This teaching is included expressly in McIntyre, first in the title, which reads “TOE LIFT ATTACHMENT FOR LEG BRACES”, and also in the description:

“The present invention relates to new and useful improvements in leg braces and more particularly to ***means to aid in the lifting of the toe of a person to eliminate toe drag and create a more natural ankle movement where the use of ankle muscles for this purpose has been lost or impaired.***” (Emphasis added.)

(Col. 1, ll. 1-7.) The only way in which an individual using the toe lift mechanism could have “a more natural ankle movement” is if their muscles for lowering their toe, after it had been lifted, remain functional. This conclusion is supported by Fig. 1, which depicts the wearer’s leg in a forward walking position and the toes extended down and away from the lifted position, shown in ghosted lines. In addition, McIntyre states:

“In the operation of the device, the tension of spring 22 is adjusted by screw 19 ***to aid in the lifting of the toe of the foot when the latter is in its rearmost position while walking and thus to reduce or eliminate drag on the toe when the foot is brought forwardly.***” (Emphasis added.)

(Col. 2, ll. 22-27.) Here, McIntyre discloses that the toe is lifted when the foot “is in its rearmost position”, indicating that at other parts of the wearer’s gait the toe is not lifted. Given that McIntyre only discloses a mechanism to lift the toe, the only possible conclusion that could be drawn by one of ordinary skill in the art is that the wearer’s muscles function to lower the toe after it has been lifted.

Wassam discloses a McKibben-type muscle actuator that includes an inner bladder and a braided material over it and attached to the ends. The inner bladder is inflatable, and inflation causes the braided material to contract then ends of the inner bladder. When this actuator is combined with the *toe lift* mechanism disclosed by McIntyre, the result is a mechanism by which the muscle actuator lifts the toe, and the wearer's muscles expands the ends of the bladder to lower the toe when the bladder is depressurized. With this combination, given the teachings of McIntyre and Wassam in their entirety, there is no need to include any additional structure to expand the ends of the bladder. The inclusion of Erickson in the cited combination, is therefore superfluous and inappropriate. For this reason, the cited combination does not establish a *prima facie* case of obviousness over claim 10.

Claim 37 was rejected as obvious over the same combination as claim 10. Claim 37 also recites "the mechanical device expands the ends [of the inner bladder] longitudinally when the inner bladder is depressurized." Thus, for the same reason as stated above for claim 10, the cited combination does not establish a *prima facie* case of obviousness over claim 37.

Each of the other claims in the application depend from one of claims 10 and 37, and each were rejected as obvious over a combination based upon the combination of McIntyre in view of Wassam, and further in view of Erickson. Thus, for the same reasons as stated above, a *prima facie* case of obvious has not been established over any of these dependent claims.

## Conclusion

For the foregoing reasons, Applicant requests withdrawal of the objections and reconsideration of the rejections.

A 2 month extension of time is hereby requested pursuant to 37 C.F.R. §1.136(a), for which the appropriate fee is submitted herewith. The undersigned believes no additional extensions or fees are due with this response. However, if an additional extension is needed or a fee is due, please consider this a request therefor and charge Deposit Account No. 03-2775, under Order No. 09049-00004-US1, from which the undersigned is authorized to draw.

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Respectfully submitted,

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